

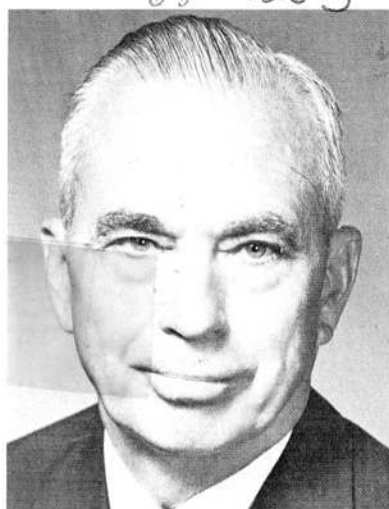
NUCLEAR DIVISION NEWS

UNION
CARBIDE

A Newspaper for Employees of the Nuclear Division, Union Carbide Corporation

Vol. 2 — No. 19

Thursday, November 4, 1971



Sylvan J. Cromer

Cromer Retires After Lengthy Carbide Career

Sylvan J. Cromer, special assistant on engineering problems, retired last week, ending a long career with Union Carbide. He was mainly responsible for the engineering process and improvement programs for three Oak Ridge facilities.

Cromer, a native of Marshall, Okla., joined Carbide in 1944 as assistant superintendent of the engineering division at the gaseous diffusion plant. For a year, he was on loan to the University of California at the Los Alamos Scientific Laboratory as superintendent of plutonium processing and fabrication. In 1947 he returned to Oak Ridge as superintendent of the engineering development division, and, in 1950, was made chief engineer in charge of engineering for the diffusion plant. In 1954, he was made co-director, Aircraft Reactor Project and director, Aircraft Reactor Engineering Division at the Oak Ridge National Laboratory. He was appointed vice president in charge of engineering of the Nuclear Division in 1957. When the industrial functions of the Nuclear Division were merged with the Ore and Metals Divisions, in 1957, into the Mining and Metals Division, he became director of engineering.

Cromer transferred to the Nuclear Division in Oak Ridge as assistant to the general manager in 1967, and was later appointed director of engineering production with the responsibility of engineering and process improvement programs for the entire division's production complex.

He is a member of the American Institute of Mining and Metallurgical Engineers, American Society of Mechanical Engineers, Scientific Research Society of America, Tau Beta Pi, and Pi Tau Sigma, and is a Fellow in the American Society of Mechanical Engineers.

The Cromers live at 123 Windham Road, Oak Ridge. Mrs. Cromer is the former Rubye Le Fevers. They have four children: William R. Cromer, Bellevue, Ohio; Mrs. James Peters, Johnson City, Tenn.; Mrs. Bruce Marden, Hingham, Mass.; and Dianna Lynn Cromer, who is attending Syracuse University.

Cromer's special interests include woodworking and photography.

ORAU Marks Silver Anniversary; Signs New AEC Contract

Oak Ridge Associated Universities (ORAU), the pioneer among corporate university management groups of its type in the United States, celebrated the 25th anniversary of its founding October 18 during the annual meeting of the Association's council of sponsoring institutions.

Formally incorporated on October 16, 1946, and operated for its first 20 years as the Oak Ridge Institute of Nuclear Studies, ORAU is an association of colleges and universities throughout the Southern region, which conducts programs of education, information, and research under contract with the U. S. Atomic Energy Commission.

Simultaneous with the anniversary celebration ORAU added two new member institutions. Beginning with 14 sponsors, ORAU today comprises 43 major public and private institutions in 15 states, the District of Columbia, and Puerto Rico, and extending geographically from Maryland and West Virginia to Texas and Oklahoma. The two new schools are the University of Alabama in Birmingham and Memphis State University.

Under its AEC contract, ORAU is responsible for the administration of programs on behalf of three missions—Biology and Medicine, operating divisions of the Com-Nuclear Education and Training, and Technical Information—as well as for the conduct of related nuclear education and research supported by other governmental and private organizations.

William G. Pollard, ORAU executive director and one of five original incorporators of the Association, presided at the 25th anniversary program which was attended by ORAU staff and members of the board of directors and council.

Union Carbide's Third Quarter Earnings Down

Union Carbide Corporation's net income for the third quarter of 1971 amounted to \$32.8 million, or 54 cents a share. This is seven cents a share less than the \$37.0 million, or 61 cents a share, reported in the third quarter of 1970. In a preliminary announcement on September 30, it had been indicated that earnings for the quarter might be lower by as much as 15 cents a share.

The decline in third-quarter operating earnings is attributable in part to lower sales in the domestic Gases, Metals, and Carbons Group and in part to unusual costs incurred in certain operations both here and abroad. Chemicals and plastics plants on the Gulf Coast were affected by a series of enforced shutdowns due to hurricane threats.

Chairman of the board F. Perry Wilson noted that most of the influences were temporary in nature and he looked on the relatively poor operating margin performance as being largely transient rather than indicating a downward trend.



BOOST TO ANDERSON FUND—Union Carbide Corporation's contribution to Anderson County's United Fund is presented to drive officials. From left are Ted Shapiro, president of the county's UF; Roger F. Hibbs, president of the Nuclear Division; Lee Beeman, special projects chairman for the drive; and Harry E. Seagren, drive chairman for the three Union Carbide plants in Oak Ridge.

\$255,259 Is Pledged Toward Three Plant United Fund Goal

Through the first 13 days of the United Fund Drive among employees of Union Carbide's Nuclear Division \$255,259 have been contributed. This represents 76 percent of the 1971 goal.

ORGDP jumped quickly out in front and to date employees have contributed \$51,294 for 105 percent of goal. General Staff employees have contributed \$17,016.

ORNL and Y-12 were progressing normally for this time during the drive. ORNL employees had contributed \$89,396 and Y-12, \$97,553.

To date employees of Nuclear Division had designated the following amounts to the different counties represented by payroll deduction: Anderson, \$145,589; Knox, \$60,996; Roane, \$31,101; Loudon, \$10,170, and Morgan, \$5,303. Designations made by cash donations to other counties totaled \$2,100.

Union Carbide Corporation's gift to Anderson County was awarded by Roger F. Hibbs, President of Nuclear Division. See photograph above.

The next issue of **Nuclear Division News** will carry a complete wrap-up of the drive among the Oak Ridge employees.

5 Holidays Left

Nuclear Division employees have five more holidays remaining this year.

Two two-day holidays await us . . . Thanksgiving, November 25 and 26; and Christmas, December 23 and 24. New Year's Day falls on Saturday this year, and Friday, December 31, will be observed as an official holiday.

Division Expanding Program For Assistance to Industry

An expanded effort in the field of industrial cooperation has been initiated by the Nuclear Division, Union Carbide Corporation.

The major element of the expanded activity involves the issuance of bulletins to industry covering such activities as items of research, innovative ideas and new techniques.

Commenting on the program, Roger F. Hibbs, President of the Nuclear Division, explained that as a major contractor for the Atomic Energy Commission, the Corporation considers part of its mission the transfer of unclassified technical information and technology derived from work performed at the facilities it operates for the AEC.

The first industrial cooperation bulletins cover such items as:

- An automated orbital pipe welder of potential use to manufacturers of welding equipment.
- Methods for bonding refractory metals which can be of use in any joining operations of refractory metals and their alloys, particularly molybdenum.
- A rotary dissolver which may be useful for selective dissolution of certain metals, such as copper and brass, from automobile scrap, etc.
- An inline fouling detector for process lines which would appear to be useful in many chemical plants and in systems employing heat transfer surfaces.
- A universal method for plating electroless nickel directly onto a variety of aluminum alloys. This method would provide corrosion resistance more reliably and at lower costs than presently available.

Each bulletin describes a specific item, reports on the stage of

development, the potential industrial application and patent status. In addition, each bulletin gives the name of the person from whom additional information can be obtained.

It is planned to issue the industrial cooperation bulletins on a quarterly basis. Businesses interested in obtaining copies of the bulletins can do so by contacting: M. E. Koons, Executive Office, Nuclear Division, Union Carbide Corporation, P. O. Box Y, Oak Ridge, Tenn. 37830.

U. S. Patents Are Listed On Radiation Processing

A comprehensive review of U. S. patents on radiation processing and irradiators is now available to the public from the Oak Ridge National Laboratory.

More than 700 patents from 1950 through 1968 are covered in the booklet entitled "Patent Literature on Process Radiation and Irradiator Design." Data include the patent number, title, dates of issue and filing, assignee, patentee, and a patent description.

The booklet also contains indexes of patents by subject and assignee, a listing of available 1969 and 1970 patents and an analysis of industrial patents by topic in present and potential applications of ionizing radiation.

A second volume, to be published later, will contain British and Canadian patents.

Copies of the booklet, ORNL-11C-34, are available at \$3 each from the Isotopes Information Center, Oak Ridge National Laboratory, P. O. Box X, Oak Ridge, Tenn. 37830.

Nuclear Magnetic Resonance Equipment Proves Highly Versatile in Y-12 Lab

By Julie Dorsey and Fred Postma

The Y-12 Plant recently expanded its analytical capability with the installation of some highly versatile nuclear magnetic resonance (NMR) equipment. Nuclear magnetic resonance utilizes the fact that most isotopes of the element behave like tiny spinning bar magnets. When a sample containing nuclei exhibiting this property called gyromagnetism is placed in a strong magnetic field (the Y-12 equipment operates at approximately 21,000 gauss), homogenized and irradiated with a weak radio frequency similar to that used in shortwave broadcasts, the nuclei are compelled to reveal their presence, identify themselves and describe the nature of their surroundings.

It can well be imagined that these significant revelations, which are obtained without damage to the sample can be of immense importance to, among others, the organic chemist, the physical chemist, the solid-state physicist, the polymer physicist and the biochemist.

Three types of nuclear magnetic resonance spectrometers are used in this laboratory: (1) a high resolution multi-nuclei 90 megahertz (MHz) spectrometer with Fast Fourier Transform capability is used for determining the molecular structure, including the relative positions and types of functional groups, in samples of

liquids or dissolved solids; (2) a 4-100 MHz pulsed spectrometer with pulsed gradient unit and relaxation time counter for studying the diffusion of a molecule through a sample of like molecules (self-diffusion coefficient) and for studying the rates and mechanisms by which reactions proceed (chemical kinetics); (3) a 2-30 MHz wide-line spectrometer for studies of crystal lattice imperfections, metal atoms in compounds and alloys, polymer crystallization, and for isotopic abundance measurements.

The high resolution spectrometer has been installed for approximately one year and has been used extensively by some groups in developing compounds with certain desired properties. This spectrometer has also been used by other groups for identifying isomers, polymers and impurities. The pulsed and wide line spectrometers are being installed at the present time.

The high resolution spectrometer is composed of four main parts: (1) a magnet whose field is strong and very homogenous (one in 10^8 or better); (2) a system for sweeping the field over a small range; (3) a radio frequency oscillator; and (4) radio frequency receiver. This spectrometer can readily investigate eight nuclei (the hydrogen proton, fluorine-19, carbon-13, deuterium, boron-11, nitrogen-14, oxygen-17 and phosphorus-31).

For signal to noise enhancement, a Fast Fourier Transform System can be used for proton, carbon and nitrogen resonance with proton broad band decoupling of protons from carbon or nitrogen.

The NMR Laboratory is staffed by Julie Dorsey, Aaron C. Rutenberg, on loan from ORNL, and Fred Postma, Y-12 Development Division. The instruments are maintained by Nat Schulman. The laboratory is part of the Special Samples Spectroscopic Group headed by William D. Harman. Otto W. Briscoe heads the Y-12 Plant Laboratory.



VERSATILE INSTRUMENT—Julie Dorsey prepares to study a sample in the high resolution nuclear magnetic spectrometer located in the Special Samples Spectroscopy area of the Y-12 Plant Laboratory. The new instrument can readily identify eight nuclei. Aaron C. Rutenberg is placing the sample in the magnetic field.

Withholding Taxes Enough? ... Ask IRS

Is your withholding sufficient to cover your tax liability for 1971? Because of recent changes in the tax laws, it may not be.

James A. O'Hara, district director of Internal Revenue Service of Tennessee, calls attention to the fact that many Tennessee taxpayers may wind up owing the government a large amount when they file their 1971 returns. IRS is primarily concerned about the potential underwithholding in cases listed below:

- Employees who expect to earn more than \$11,500 in 1971 and intend to claim the \$1,500 standard deductions, or itemized deductions totaling less than 13% of their salaries;
- Single employees who expect to earn \$15,000 or more in 1971;
- Married employees who expect to earn \$25,000 or more in 1971 and whose spouses are not employed;
- All working couples.

What should you do? You can increase withholding by asking your Timekeeping Department for a new Withholding Exemption Certificate, Form W-4. If you have any questions, telephone or visit any Internal Revenue Service Office.

Glad Baking Bag by Thanksgiving

Union Carbide has announced the discovery of a process by which polyester film can be heat sealed commercially, opening new horizons for the use of this film in food packaging. The first of the corporation's products to use the new process will be a line of Glad oven bags to be on the market this fall.

The first member of the Glad oven bag line will be in retail food stores in time for pre-Thanksgiving sales. Packaged one to a box with turkey and dressing recipe included, the bag will be of a size large enough to roast a 22-pound turkey. The bag eliminates the need for basting and the

messy post-Thanksgiving dinner cleanup of roaster and oven.

The oven bags will be manufactured at Union Carbide's Ottawa, Ill., plant.

TRAFFIC DEATHS

During 1970 6,500 people were killed as a result of driving off the roadway, according to an annual survey. Reasons for this type of accident are tired motorists, unsafe cars, and those under the influence of alcohol.

Metals Society Sets November 16 Meet

The Oak Ridge Chapter of the American Society for Metals will meet November 16 at Oak Ridge Country Club. Guest speaker will be Taylor Altan, an Associate Fellow at Battelle Memorial Institute. His topic, "Selection of Equipment for Forging," will cover the fundamental characteristics of present machinery and modern developments in design and application of forging equipment.



A native of Turkey, Altan received his Diploma Engineer Degree in materials processing from the Hanover Technical University in Germany, and the M.S. and Ph.D. degrees in mechanical engineering from the University of California in Berkeley.

A social hour and buffet begins at 6:15 p.m. followed by the technical talk at 8 p.m.



SAMPLE LOADING—James M. Barnes places a sample in the magnet area of the pulsed nuclear magnetic spectrometer. The instrument, still in the process of installation and testing, will be used for studies in self-diffusion coefficients and chemical kinetics.



DOCUMENT DECLASSIFICATION — A massive declassification program has been underway at ORNL since August 23. During the first five weeks of the program approximately 35,000 documents were read by one of a group of 36 ORNL technical staff members and approximately 28,000, or 79 percent, were declassified according to guidelines provided by the AEC. Some documents went back as far as the beginning of the ORNL project in 1943. The program will continue until records of the documents are completed and all copies of the documents are declassified. At left, document declassifying in progress in Laboratory Records; right, a clerical team makes records of declassified documents.

NUCLEAR DIVISION NEWS



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— Member —

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Waste Heat Conference Hears Ecology Papers in Gatlinburg

There may be gold in the warmth of power plant discharge water, experts told some 200 attendees at the recent Waste Heat Utilization Conference in Gatlinburg.

Addressed by agriculturists, "aquaculturists," reactor engineers, environmentalists and representatives of civic, state and federal organizations, the conference was given to a comprehensive view of the problem of safely and economically dealing with the waste heat of steam-electric plants.

The meeting, sponsored by the Electric Power Council on the Environment, a coalition of public and private power environmentalists, offered a program designed to suggest means for reducing the economic burden of safe release of thermal effluents. Chairman of the meeting was vice president of EPCE Rod J. McMullin, who represents the Salt River Project of Phoenix, Ariz. Assisting the sponsor was Oak Ridge National Laboratory, which also provided three of the speakers and the technical program coordinator, Marvin M. Yarosh of the Reactor Division.

Food Samples

Meeting participants were treated to giant oysters on the half shell that were grown by an oyster farm downstream from the Long Island Lighting Company's steam power plant, whose warmth is given credit for the unusual growth of the bivalves. Also provided as evidence of the benefits of waste heat were banquets of catfish fillets and prize-winning

garden produce grown under the controlled environment of year-around greenhouse acreage.

Participating from ORNL were S. E. Beall, director of Reactor Division, who chaired the first session, a technical overview of some of the more promising uses of thermal energy; William C. Yee, who spoke on "Thermal Aquaculture: Its Potential and Problems"; and Arthur J. Miller, whose talk dealt with the urban use of thermal energy. Both Yee and Miller are also with Reactor Division.

The three days of sessions also included a talk by Richard P. Nalesnik, chief of the division of water quality standards for the U. S. Environmental Protection Agency, who spoke on "Water Quality Standards: Impact on Waste Heat."

(Continued on Page 7)

WANTED

Rides Car Pools

RIDE OR JOIN car pool from Outer Drive between Michigan and Kentucky, East Portal, 8 a.m. Cliff Patrick, 3-6781 or 482-4809.

RIDE from east side of Lenoir City to West Portal, 8 a.m. Phone 3-6646 or Lenoir City 6-3913.

CAR POOL MEMBER from Garden Apartments to East or North Portal. Charles Klabunde, 3-1128 or 483-8055.

RIDER from Fountain City-Inskip area. George Hamilton, 3-6914.

TWO CAR POOL MEMBERS from vicinity of Waddell, West Outer, Pennsylvania, or Utah to East or North Portal, 8:15 a.m. Tom Burnett, 3-6939 or 483-1975.

2339-71



FIREFIGHTERS OVER GOAL — ORNL firefighters, ATLC Local 346, have shown how team effort also works in their United Fund drive this year. With 100 percent participation they have achieved 154.75 percent of goal. Pictured left to right row 1 are R. C. Wallace and E. R. Humphreys; row 2, J. I. Fine, R. L. Arwine and J. A. Davis; row 3, R. L. Atchley and H. L. Smith. Not available for picture are C. C. White, W. Borum, J. A. Field Jr., J. R. Fleenor, H. D. Rose, E. R. Ferguson, C. E. Key and W. L. Whaley.

Moon Study Research Man Dies in Knoxville Hospital

James L. Kolopus, a research staff member in the Solid State Division, since 1967, died October 16 at St. Mary's Hospital in Knoxville following a short illness.

Kolopus was a physicist and for the past year was an acting principal investigator in cooperation with NASA while performing magnetic studies on rocks brought back from the moon on Apollo missions. A native of Elyria, Ohio, he received his B.S. degree from Notre Dame University and the M.S. and Ph.D. degrees from the University of Missouri.

Memorial services were held October 18 at St. Mary's Catholic Church in Oak Ridge and October 20 at St. Mary's Catholic Church in Elyria, Ohio. Burial was in Elyria, Ohio.

He is survived by his wife Joanne and three children, James Anthony, Catherine Anne and Karen Marie. The family requests that any memorial be made to the American Cancer Society in care of Mrs. Donald Aubuchon, 408 Greenwood Drive, Clinton.

M. E. Green, Lenoir City, Dies after Short Illness

Milton E. Green, a sheet metal worker in Plant and Equipment Division since 1956, died October 23 at Ft. Sander's Hospital in Knoxville, following a very brief illness.

Mr. Green, a resident of Route 4, Lakeview Drive in Lenoir City, was a member of Local 51 of the Atomic Trades and Labor Council; Avery Lodge 593, F. & A.M.; and a charter member and deacon of Friendship Baptist Church.

Funeral services were held October 24 at the Friendship Baptist Church in Lenoir City. Mr. Green is survived by his wife Katie, a daughter, Mrs. Eugene Watson of Lenoir City and a son, Johnny C. Green of Memphis.

W. C. Garrison Retires To Interesting Vocation

William C. Garrison retired November 1 after more than 21 years of company service. He was a leadburner in Plant and Equipment Division.

A native of North Carolina, he worked in construction before coming to ORNL. He has a set of activities planned for both summer and winter. For summer there's fishing, gardening, yard work and remodeling. During winter he ties fishing lures, makes note paper and Christmas cards from leaves, wildflowers, weeds, waxed paper and facial tissue. And he is planning to add a new activity—making Tiffany lamp shades. If he wishes to work, there are always churches seeking his services to repair their stained glass windows. Both the stained glass repair and lamp shades require expertise working with leaded glass, Garrison's specialty for 40 years.

Garrison

Oak Ridge National Laboratory

ORNL Editor

Martha Goolsby

extension 3-6421

2337-71



LEADBURNERS SET EXAMPLE—In 1971's United Fund drive the ORNL leadburners, with 100 percent participation achieved a whopping 235.48 percent of goal. The leadburners are, left to right, William C. Garrison, Clarence R. Wright, Thomas E. Rush and Daniel C. Nelley. The leadburners are Local 718 of ATLC.

2338-71



BOILERMAKERS EXCEED GOAL — ORNL's Boilermakers achieved 100 percent participation and 142.25 percent of goal in the United Fund drive during the first eight days. Members of the Local 330 of ATLC are seated, left to right row 1, Al Metzguer, John Jackson, D. R. Murray, H. W. Naylor and M. F. Curtis. Row 2 standing inside vessel left to right are C. F. Ward, J. L. Mullins and J. G. Petrey. Standing around the outside of the vessel left to right are J. S. Woodard, R. C. Owsley, A. D. White, O. R. Walker, E. T. Cagley, Bill Fox, and E. D. Hines.

2340-71



SHIFT SUPERVISORS ARE FIRST—The Shift Supervisors were the first of ORNL's Divisions to complete their drive and turn in cards—and with fine results, too. They achieved 163.16 percent of their goal. During a shift change the following were available for photographing, left to right, W. S. Hornbaker, G. C. Cain, W. F. Spencer, J. H. Green and Lelia Heidel.

Oak Ridge Y-12 Plant

Y-12 Plant Editor James A. Young
extension 3-7100



IN RECOGNITION—C. E. Robinson, center, is recognized for past contributions to the United Fund in the Y-12 Plant. Superintendent Jack M. Case, left, presents Robinson a special plaque signed by him and B. W. Hensley, president of the Atomic Trades and Labor Council. Robinson has served as co-chairman for many drives in the past in Y-12. The honor read "In recognition of the distinguished and outstanding service performed for the United Fund."

Miskell Heads Committee At International Meeting

Ronald V. Miskell, Y-12's Numerical Control Engineering, has headed a United States delegation to the International Organization for Standardization, Subcommittee on Numerical Control. The delegation convened in Zurich, Switzerland, October 10-17.

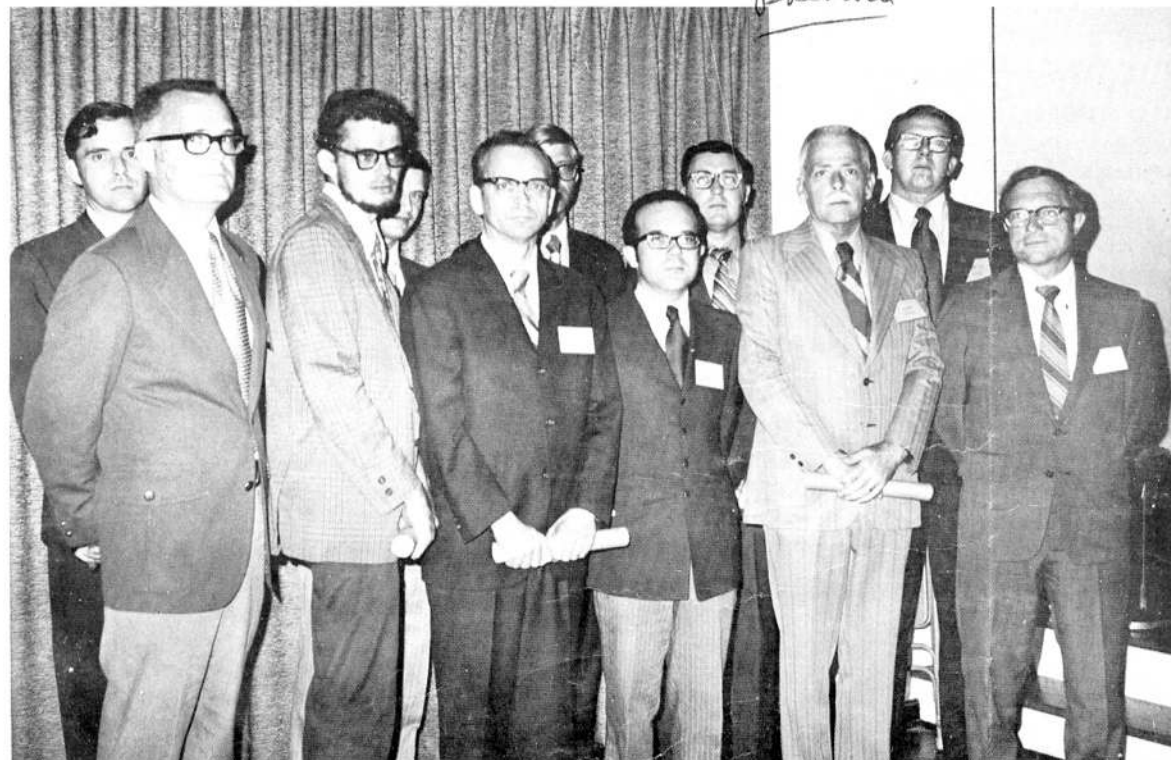
Delegates from over 20 nations discussed standards on codes, formats, vocabulary and control symbols for numerical control

SAFETY SCOREBOARD

The Y-12 Plant Has Operated 12 Days Or 425,000 Man-Hours (Unofficial Estimate) Through October 31 Without A Disabling Injury SAFETY AT HOME, AT WORK, AT PLAY

systems. Numerical control systems are used to operate various types of machines by programmed tapes.

Basketball and volleyball seasons begin soon. See page seven!



ENGINEERS CERTIFIED—Several Y-12ers received Professional Engineering License Certificates at a recent meeting of the TSPE in Oak Ridge. The banquet honoring the newly certified engineers was held at the Oak Ridge Country Club. From left are Donald Davidson, Walter Grandey, Paul Burn, James Woodward, Mark Grimm, Charles Anderson, David H. Gentry, Charles Montgomery, Jerry Lewis, Bobby J. White and George Jasny, director of engineering, who presented the certificates to the Y-12ers.

WANTED Rides Car Pools

Ride wanted or will join car pool from Midway sub-division, near Oliver Springs, to North Portal, straight day. W. R. Jago, plant phone 3-5935, home phone Oliver Springs 435-7187.

Rider wanted from North Knoxville, Whittle Springs, Washington Pike, Clinton Highway section, to East, North or Central Portal, straight day. J. F. Baker, plant phone 3-5935, home phone Knoxville 523-4542.

Ride wanted from 122 Viking Road, Oak Ridge, to East Portal, straight day. Sarah Coram, plant phone 3-5226, home phone Oak Ridge 483-7534.

Ride wanted from 476 West Outer Drive, Oak Ridge, to North or Biology Portal, straight day. A. L. Donald, plant phone 3-7671, home phone Oak Ridge 483-8537.

Heart Attack Claims Well-Known Y-12er

Thomas C. LaRue, Special Production, died October 16, in the Sweetwater Clinic, from an apparent heart attack. A native of Huntsville, Ala., he came to Y-12



Mr. LaRue and Helen, all at home at Route 2, Philadelphia; parents, Mr. and Mrs. Pery LaRue, Loudon; brothers, William, Huntsville, Ala.; Robert, Concord; Malcolm, Knoxville; sisters, Mrs. Betty Jo McDonald, Enid, Okla.; and Mrs. Helen Smith, Piney Point, Md.

Funeral services were held at the Cedar Forks Baptist Church, with the Rev. Virgil Turbyville and the Rev. J. D. Crisp officiating. Burial followed in the Sweetwater Valley Memorial Gardens.

Guard Department Promotes G. A. May and B. J. McMeans



George A. May



Bobby J. McMeans

The Guard Department has announced the recent promotions of two men . . . George A. May has been named a captain, and Bobby J. McMeans a lieutenant.

May, a native of Sweetwater, lives there now on Hickory Lane, Route 4. He worked in the American Woolen Mill during the 30's, and with the Aluminum Company of America from 1941 until 1942. He worked briefly for the Tennessee Valley Authority at Fort Loudon Dam. He came here July 12, 1943. He served in the Marine Corps from 1944 until 1946, and returned to Y-12.

Mrs. May is the former Esther Glandon, and they have a daughter Betty Hall, Madisonville, and

a son Johnny May, Ft. Myers, Fla. They also have three grandchildren.

Bobby J. McMeans

Bobby J. McMeans, a career soldier, is a native of Iuka, Miss. He served in the U. S. Army from 1948 until 1963, in Viet Nam, Germany, Korea, Hawaii, and on many posts in the United States. He retired as a staff sergeant.

He lives at 5 Park Avenue, Maryville. Mrs. McMeans is the former Mary Ann Cate. The couple has three children, Charles, Barbara and Elizabeth.

Harding Paper Depicts Preventive Maintenance

Large-scale maintenance operations conducted at the Y-12 Plant were discussed by Union Carbide's John E. Harding at an American Management Association training course in maintenance management in Atlanta on



Harding

September 29. The title of Harding's lecture was "Preventive Maintenance and Cost Control."

Harding, a maintenance supervisor, described how computer-scheduled programs assist in maintaining service records on approximately 4,500 pieces of plant equipment, ranging from machine tools to fork lifts.

The Plant's Maintenance Division also is responsible for the repair utility and housekeeping functions for 300 buildings with a total floor space of six-million square feet; 400 motor pool vehicles; and some 3,600 certification instruments.

'Charlie Brown' to Open Playhouse's 29th Season

Friday, November 5, at 8:20 p.m., the Oak Ridge Playhouse will happily open its 29th season with a musical for everyone, "You're a Good Man, Charlie Brown." Based on Charles M. Schultz's comic strip, "Peanuts," the show had a phenomenal run in New York and has broken records in major cities all over the country.

Jim Gilpatrick, Karen Volkin, Bob Watrous, Eddie Myers, Alan Mynatt, and Bobbie Gilbert portray, respectively: Charlie Brown, the born loser; Lucy Van Pelt, the most self-assured girl in town—or the world, for that matter; Snoopy, the beagle with a wild imagination; Schroeder, the Beethoven idolizer; Linus, the neighborhood philosopher; and Patty, the unconcerned one.

The musical will run November 5, 6, 11, 12, 13, 18, 19, 20, 26 and 27 at 8:20 p.m. and November 13 and 20 at 2 p.m.

Stair Daughter Married In Soddy-Daisy Ceremony

Miss Rhonda Stair and Lloyd Wade Cox were married recently at the South Daisy Baptist Church, Soddy-Daisy, Tenn., with the Rev. Jack B. May officiating.

The bride is the daughter of John Stair, Y-12's Production Radiation Testing, and Mrs. Betty J. Aslinger, Daisy. The bridegroom is the son of Mr. and Mrs. Lloyd Gene Cox, Chattanooga.

Following a wedding trip to Gatlinburg, the couple is living at 1105 Dayton Blvd., Chattanooga, where the bridegroom will enter The University of Tennessee at Chattanooga this fall.



Mrs. Lloyd Wade Cox



ALL-OUT THESPIANS—This group of "actors" produced the many skits relating to the United Appeal activities in the Paducah Plant during the highly successful drive. From left are Ophelia Oliver, Dean Tate, Solon Williams, James Thomas, Leroy Hall and Mary McDougal.

Paducah Gives 15% More This Year in United Appeal Drive!

The Paducah Gaseous Diffusion Plant has pledged more than \$36,000 to the United Appeal campaign, just finished in the plant. This means an increase of more than 15 percent over last year's record-breaking figure.

United Appeal funds will go to the Paducah - McCracken County Community Chest, the Red Cross, the Mayfield-Graves County United Appeal, the Ballard County United Appeal, and the newly-organized Massac County Community Chest in Illinois.

"I feel convinced," Gus Legeay, plant committee chairman told the Paducah Sun-Democrat, "that this campaign has been so successful because it has had the wholehearted support of the employees and because of the spirit that prevails through every level in the plant."

H. E. Anderson, J. O. Dobson and Joe White served as co-chairmen of the committee. Anderson commented that the people responsible for the campaign publicity this year had done everything they could to inform the employees about the agencies being supported by their contributions and to generate enthusiasm for the fund drive.

One activity, pointed out by all chairmen as having an unusual effect, was the visit to the participating agencies in the United campaigns. Howard Pulley was chairman of this committee. Pulley believed the visitation program, conducted annually, emphasized dramatically the human needs to be alleviated. He quoted one visitor as saying, "Where would these children be if it were not for our help?" The institutions which help children are particularly appealing, Pulley pointed out, citing the J. U. Kevil Center and the Paducah Friendly Home, among others.

In-plant campaign displays and visual aids were headed up by B. D. Penry and were particularly effective this year. With committeemen J. C. Hale, H. B. Hargrove, W. C. Taylor and Willard Wilson, the group painted slogans on plant buses, displayed fluorescent banners, posted photographs of employees during the visits to various institutions and posted signs along the entrance road, among many other devices.

New also this year were the 28 productions of a series of skits in

the plant theater, some as early as 5:30 a.m.; others as late as 6:30 p.m.

C. O. Hayes, who headed the publicity committee for the Paducah plant, summed up the total effort by remarking, "It all boils down to the individual."

Commenting editorially on the successful drive, the **Paducah Sun-Democrat** stated: "We have become accustomed to the habit of the employees of Union Carbide at the Paducah plant, of setting a fine example for the rest of us in their generosity to the annual campaigns of Community Chest and United Fund appeals in this area."

"The 1,200 Carbide people had completed their 1971 effort in self-solicitation, to a large degree, a week ago, when they hit the figure of \$36,000 in pledges and gifts that will be shared among several agencies in the area from which most of them commute to the Paducah plant. This total was a 15 percent increase over 1970."

"The secret of the success of these campaigns at Carbide is organization. Labor and management provide their hardest-working, most enthusiastic volunteers at all levels of the committee structure; planning for the next one begins right after the current solicitation is completed; and everything possible is done to make it easy for individuals to give. They respond by giving generously."

Mixed Scrabble

Paducah Plant golfing employees and spouses gathered at beautiful Ballard County Country Club for the second renewal of the highly popular mixed-scrabble golf tournament recently.

Four hours later when the firing and falling back had ceased, the team captained by Jake Piercy and consisting of George Williamson, Dave Wallace and Betty Freeman, had come in with a fine five under par 67, and were declared the winners. Teams captained by Ford Cherry and Elvin Kuehn came in second and third, respectively, with 68 and 69. Jeff Vandeven and company won fourth after a tie-breaking playback-through-the-holes. Prizes of golf balls were distributed to eight winning teams.

Limerick Prize Awarded To Paducah's Dr. Rucker

Dr. Richard H. Rucker, medical director at Paducah, was winner of the July limerick contest, sponsored by the **Industrial Supervisor**, published by the National Safety Council.

Dr. Rucker took first prize, \$10. The limerick, which he completed by adding the last line, went:

"Watch your step in the summertime heat.
"Or the cramps may keep you off your feet.
"Extra salt and more water
"Is your cue when it's hotter.
"Then your bark will not sound like a bleat."

The magazine **Industrial Supervisor** has wide circulation among all the four Nuclear Division plants.

SPEED A FACTOR

Excessive speed was the major factor in 1969's tragic highway record, according to an annual survey by a major insurance company. More than 56,000 persons were killed last year, and more than 4,700,000 injured.

Paducah Gaseous Diffusion Plant

Paducah Editor Keith Bryant
extension 369

15 Cost Reduction Awards Presented As \$5 Million Savings Seen in 1971

A total of 15 cost reduction awards have been presented for outstanding contributions to the Paducah Cost Reduction Program. They were:

Bill Blair, Harold L. Howell, Jack L. Hulett, Leslie S. Lough and Charles E. Sanders, Fabrication and Maintenance Division.

Harry P. Colbert, Plant Engineering Division.

Robert F. Smith, Laboratory.

Clifford A. Powell, Robert E. Jessing, Carl D. Ecklund, William Kelley, Ronald E. Terrell, Operations Division.

David D. Barclay, Stewart E. Tolar, Eugene P. Larson, Finance and Materials Division.

A total of 560 cost reductions were reported during fiscal year 1971 which resulted in \$5,255,000 savings for the entire year. This

exceeded the plant goal and establishes a new record in both number and actions and amount of savings.

'21st Century' Films Available to Schools

The famed "21st Century" films, produced by CBS-TV for Union Carbide, are now available on a free-loan basis to 100 schools and organizations in West Kentucky. Narrated by Walter Cronkite, the 30-minute films are on 16 mm film and in color.

They are made available by the distribution centers of Modern Talking Pictures Service, Inc., 2323 New Hyde Park Road, New Hyde Park, N.Y.



EDUCATIONAL GRANT—R. A. Winkel, left, superintendent of the Paducah Gaseous Diffusion Plant, presents an educational grant to the Paducah Junior College Foundation to be used by Paducah Community College. Accepting the grant is Donald J. Clemens, Director of PCC. The unrestricted grant of \$1,000 continues to point out the importance of the Paducah College to the educational program in the Western Kentucky area and the close contact that exists between this institution and Union Carbide.

APPLICATION FOR TICKETS

Requests **MUST** Be In By November 19

CARBIDE CHILDREN'S CHRISTMAS PARTY

(For Children Ages 2 to 9)

SATURDAY, DECEMBER 11, 9:30 A.M.

ARCADE THEATRE, PADUCAH, KY.



Employee's Name _____ Badge No. _____

Home Address _____

(Please Print Street Address or RFD, City and Zip Code)

Number of your children who will attend the party (please list):

(BOYS)

(GIRLS)

NAME _____	Date of Birth _____	NAME _____	Date of Birth _____
NAME _____	Date of Birth _____	NAME _____	Date of Birth _____
NAME _____	Date of Birth _____	NAME _____	Date of Birth _____

List names, ages and sex of children very accurately. The information will be used to bring present records up to date.

NOTE: Fill out form completely and return as soon as possible, but not later than November 19, to the Recreation Office, Union Carbide Corporation, P.O. Box 1410, Paducah, Ky. 42001. Tickets will be mailed to parents at their home addresses.

Oak Ridge Gaseous Diffusion Plant

ORGDP Editor Doug Carter
extension 3-3017



OVER THE TOP—The Oak Ridge Gaseous Diffusion Plant was the first of the three Nuclear Division plants in Oak Ridge to go over its goal in the United Fund drive! Many employees believe that visits from some of the agencies helped in this year's drive. Above, Steve Brody, director of Daniel Arthur Rehabilitation Center, Steve Massengale, and Richard B. Schappell, Operations Analysis, prepare for a session with an ORGDP UF Committee. The Rescue Squads, Boys Clubs, and several other fine United agencies participated in the educational efforts.



Ride wanted from Merchants Road, Clinton Highway section, to ORGDP, 8-4:30 shift. Danny Britton, home phone Knoxville 687-9443.

Welding Tips Told In BONUS Article

A paper describing the development of techniques to eliminate fabricating defects discovered on the prototype boiling nuclear superheat reactor (BONUS) appeared in the September issue of WELDING JOURNAL.

Authors of the paper, entitled "Brazing the Shell Assembly for the Bonus Superheater Fuel Element," were Edward C. Kirstowsky, ORGDP; Leonard C. Williams, ORNL; and Edgard A. Franco-Ferreira, Y-12. Former ORNL employee Gerald M. Tolson was also one of the co-authors. The paper was selected for the First International AWS-WRC Brazing Conference held in Cleveland, Ohio, in June of last year.

A paper also relating to the BONUS problems, entitled "Production and Testing of Superheater Fuel Elements," appeared in the April, 1971, issue of MATERIALS EVALUATION, the official publication of the American Society for Nondestructive Testing. This paper was co-authored by Kirstowsky, Tolson, and Bruce J. Bogardus, also of ORGDP.

J. Upchurch Made Carpenter Foreman

The Maintenance Division has recently announced the promotion of Jerry K. Upchurch to carpenter foreman.

Upchurch, a native of Jamestown, came to ORGDP in March, 1965. He hired in with Carbide April 27, 1960, working first as a production machinist in the Y-12 Plant.

He lives on Ridgeview Drive, Oliver Springs. Mrs. Upchurch is the former Darlene Seibers of Coalfield. They have a daughter, Tanya Renee, four years old.

Spectator sports, hunting and fishing occupy much of his spare time.



Jerry K. Upchurch

ORGDP—Bowling

Bowler of the week, Chloris Starlin rolled scratch scores in the ORGDP Women's League of 168-202-140 for a 510. Her handicap scores gave her a 627 series. Her 202 was high scratch game of the week. Jo Acres rolled the high handicap game of 246. The Wood Bees scored the high team handicap series with 2342.

In the Tuesday ORGDP Bowling League W. S. Wendolkowski rolled a 230 scratch game and a 263 handicap. S. C. Jacobs took high series honors with a 580 scratch and 691 handicap.

Record Attendance Seen At Barbecue-Hootenanny

As Barbecue-Hootenannies go, this one was by far the best, so say ORGDPers. Begun in 1965, with an attendance of 340, the affair has grown to its present dimensions. Attendance this year: more than 1,100!

Good food, fellowship and the relaxing atmosphere at the Clark Center Recreation Park combine to make the party one of the nicest things to happen in a long time. Special credit should go to Charles H. McIntyre, who supervises the barbecuing of the succulent meat and to A Shifters who contribute "above and beyond" in helping to see that the food is ready when needed.

The long lines for food attested to its goodness, as many were there for the second time!

ORGDP Divisions Plan Dance for December 11

ORGDP employees are planning a big holiday dance, set Saturday, December 11. The soiree will be held at the Oak Ridge Civic Center, beginning with a social hour at 8 p.m. Dancing will be from 9 to 1 a.m. with music provided by Teddy Garland, who plays

"Music for Lovers," according to the arrangements committee.

Three sponsoring divisions: Finance and Materials, Shift Superintendents and Utilities and Industrial Relations announce that tickets will be available shortly.

SAFETY SCOREBOARD

ORGDP

Has Operated

2,456,00 Safe Hours
Through October 28

Since last disabling injury on May 4



On the Horizon

The End of Smallpox?

By T. A. LINCOLN, M.D.

In 1796, Dr. Edward Jenner of Gloucestershire, England, inoculated some matter obtained from a dairy maid's cowpox sore into the arm of eight-year-old James Phipps. Subsequently, in spite of repeated exposure to virulent smallpox, James remained miraculously protected. Now, 175 years later and after many hundreds of millions of vaccinations, smallpox is prevalent in only nine countries. The last documented case in this country occurred in 1949. Because of this decline and a concern about the complications of immunizations, the Public Health Service has recommended that routine vaccinations be discontinued in the United States. Many older physicians who

13665
have seen the ravages of this disease wonder if this recommendation is premature.

It has been estimated that some 60 million people were killed by smallpox in Europe during the eighteenth century. The disease was also prevalent in America. Whole families were frequently wiped out. An example was the epidemic which occurred in Chatham, Mass., in December, 1765. Out of 127 families, 61 persons were attacked and only 24 recovered. In the John Rider family, he and his wife, their daughter Bethiah, their



Dr. Lincoln

son Zenas and his wife, their son Stephen, his wife and nine of their ten children and the wife of their son Reuben all succumbed.

Drive Started in 1967

Although the efficacy of vaccination in virtually eliminating the disease has been obvious for at least 30 years, a worldwide eradication campaign wasn't started until 1967. The World Health Organization (WHO) mounted a mammoth vaccination program in countries where smallpox was still common. Over 500 million vaccinations have been given and the program is continuing. In 1967 130,000 cases were reported; in 1971 only about 25,000 are expected.

In addition to vaccinating as high a percentage of the population in an infected country as possible, a great effort has been devoted to improve reporting of cases. No eradication program is possible unless all cases are reported. The WHO has decided that a period of two years must elapse following the last detected case before eradication can be provisionally assumed.

The primary natural host of the smallpox virus is man, but the monkey is also capable of developing the disease. Close association, particularly within the family group, is generally required to spread the infection. The virus is relatively resistant to drying and can be spread on clothes and other personal articles. The virus in smallpox scabs wrapped in cotton and kept cool will survive 17 months. Healthy but infected carriers apparently do not occur.

Vaccination Carries Risk

Although not generally appreciated, vaccination carries a significant risk of serious complications. The most common is eczema vaccination, when people who have eczema develop a severe skin infection caused by the vaccine virus. It may occur even though the eczema is mild or in complete remission at the time of exposure, and may come from just contact with a person who has been vaccinated. Vaccinia necrosum, an extremely severe necrosis at the site of vaccination, often will spread to other areas of the body. It occurs primarily in people who have a deficiency in their immune mechanism as the result of a genetic deficiency, a malignancy such as leukemia or Hodgkins disease, or artificially as the result of immunosuppressive treatment. Encephalitis and generalized vaccinia are other dangerous complications.

The risk of a complication is much higher in infants and in general from the first or primary vaccination. Based on several extensive studies in this country, the risk of death caused by a complication following a primary vaccination is about five per million vaccinations in children less than one year old and for all ages, about one per million. The risk of death from revaccination is only one per 10 million. Many of the complications and deaths reported could have been avoided if the contraindications to vaccination had been carefully fol-

Conference Treated To Foods and Views

(Continued from Page 3)

Byron L. Price, general manager of the Eugene, Ore., Water and Electric Board, and George H. Vanderborgh, Jr., vice president of research and development for the Long Island Oyster Farms, Inc., of Northport, N. Y., were among those who described demonstration projects that are successfully using waste heat to enhance food production.

Gerald G. Williams, director of the agricultural development division for TVA in Muscle Shoals, Ala., V. M. Piland, vice president of engineering for the Great Northern Corporation of Tulsa, Okla., and W. R. Watts, specialist in market development for Florida Power Corp. of St. Petersburg, all spoke of projects for using waste heat from the point of view of the power plant operators.

ORNL staffers serving as program consultants for the conference, in addition to Beall and Yee, included D. B. Trauger, Associate Director of the Laboratory in charge of reactor technology; Claire Nader, Associate Director of the ORNL-NSF Environment Study Program; and C. C. Coutant, Ecological Sciences Division.

Reactor Division Staffmen Discuss Geneva Meeting

Sam E. Beall and Murray W. Rosenthal, Reactor Division, will speak on "The Fourth Geneva Conference" at the November Safety Program Seminar. They will include in their discussions information from sessions of safeguard systems analysis, environmental effects, nuclear plant performance and safety aspects, legislative and regulatory aspects, developments in breeder and advanced converters, and waste management.

The seminar is set for November 18, at 9:15 a.m. in the 4500 East Auditorium, Oak Ridge National Laboratory.

lowed. Even so, the risk of death from a vaccination is far greater than the risk of dying from smallpox, at least in the United States.

Traveler Plays Minor Role

Epidemiologists at the Center for Disease Control (CDC) in Atlanta have estimated that with existing rates of disease in affected countries and the number of travelers from them to this country, we should expect no more than one traveler every twelve years to enter while infectious. Smallpox would not spread rapidly even if this happened. In Europe during the past five years, the average outbreak following an importation resulted in only ten cases, and over 50 percent of these occurred in health personnel. If doctors and nurses continue to be vaccinated, the CDC estimates that it would require 15 importations per year to produce the same mortality currently associated with vaccination.

The obvious answer is a safer vaccine. With smallpox rapidly disappearing throughout the world, the tremendous effort necessary to develop such a vaccine seems unlikely. The WHO believes it should be possible to achieve worldwide eradication of smallpox in the next five years. Let us hope so. In the meantime, careful vigilance will continue to be essential.



CHARLIE BROWN CAST—The "Charlie Brown" cast includes Jim Gilpatrick (L. O., ORNL); Bobbie Gilbert (Robert, ORNL); Karen Volkin (Elliott, ORNL); Bob Watrous, Y-12; Eddie Myers (David, ORGDP); and Alan Mynatt. "You're a Good Man, Charlie Brown," opens the Playhouse season Friday.



SPORTS NOTES



ALL-CARBIDE — SMALLBORE RIFLE

In the All-Carbide Smallbore Rifle Indoor League Match 1, winners were F. M. Barnes of ORNL with a 297 score, J. L. Huff of Y-12 with a 292, and R. J. Spurling of Y-12 with a 289.

In Match 2, J. L. Huff of Y-12 took top honors with a 293, followed by F. M. Barnes of ORNL with a 290, and W. I. Galyon of Y-12 with a 282.

ALL-CARBIDE VOLLEYBALL AND BASKETBALL

Recreation is now accepting team entries in the basketball and volleyball leagues. Deadline for team entries is November 19. League play for basketball begins on November 29, for volleyball on December 2.

All basketball and volleyball games will be played at the Oak Ridge High School. Send your entries to the Recreation Department, ORNL, Building 4500N, Wing 5.

Y-12—Bowling

The Classic Bowling League finds the Eightballs high on the ladder, with a 27 win-5 loss record thus far. Their hot alley-work continues to make them difficult for opponents in the league. The Swingsters' Del Ducay rolled a 245 game recently.

Meanwhile on Monday, the C League features the Rounders and Badgers tied for top spot at the present, 18 wins-6 losses. J. C. Kendra, Rollmasters, rolled one night with a 233 game.

The Alley Cats post a 23 win-9 loss on the line to take immediate command of the Y-12 Mixed League. The Goofers' Fred Hammond rolled a 225 game and C. C. Roberts, Hit & Misses, posted a 220 scratch game recently... topping out with a 661 handicap series that night!

All-Carbide—Bowling

In the Carbide Family Mixed League Sam Babb of Dare Devils rolled the high scratch game for men with a 240. Tillie Plaza of Oops had a 201 for the high scratch women's score.

ORNL—Bowling

"A" League winners are high game scratch, Don Gardiner of

Pockets with 219; high game with handicap, H. Bryant of Pee Wees with 253; high series with handicap, B. Davis of Eagles Eyes with a 648.

"C" League honors went to high individual scratch game, J. W. Cable of Pin Heads with a 231; high individual handicap game, M. R. Anderson of Alley Rads with 255; high individual handicap series, B. E. Bowers of Alley Rads with 651.

"C" League honors went to high scratch game Hawkins of Gutter-snipes with a 220; high handicap game, Longest of Limits with 259; high individual series with handicap, Anthony of Guttersnipes with a 649.

Ladies Bowling League, Salley Stockstill of Pick-Ups had a high scratch game of 223 and high series scratch of 571. High team series with handicap, Mousechasers with 2326 scored honors.

Journal to Feature S. C. Lind Memoirs

The January 1972 issue of the Journal of the Tennessee Academy of Science will be devoted primarily to the memoirs of Samuel Colville Lind which were written in 1962.

Born in McMinnville in 1879, Lind was one of Tennessee's greatest native scientists. He was president of ACS in 1940.

He was one of the pioneers in the study of radiation, particularly with radon gas. After retiring in 1947 as chairman of the Chemistry Department at the University of Minnesota, Lind spent many active years as a consultant to ORNL until his death in 1965.

A limited number of extra copies of this issue will be printed for non-members of the Academy. These may be ordered by sending \$2, which includes postage, to the Journal Editor, Gus Tomlinson, George Peabody College, Nashville, Tenn. 37203. Make checks payable to Tennessee Academy of Science. Deadline for orders is December 1, 1971.

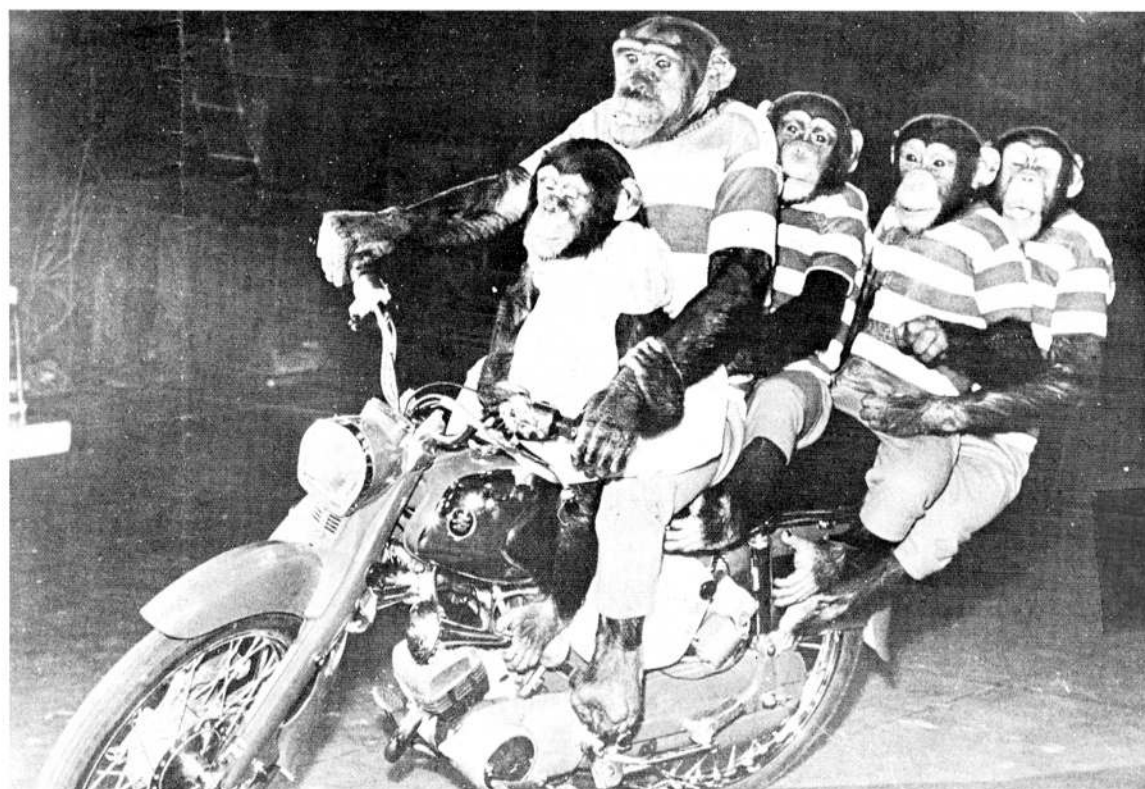
For any additional information, phone P. S. Rudolph, 3-1783.

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CHRISTMAS CHIMPANZEES—The Kirby Chimps, who have performed with Ringling Bros. and Barnum & Bailey Circus, are featured in the Carbide Christmas parties for kiddies, to be held Wednesday, December 22, at the Oak Ridge High School auditorium. Ticket application appears below.

Christmas Party Set in Paducah, Oak Ridge, for Carbide Children

Daytime parties for Carbide children are slated in Paducah Saturday, December 11, and in Oak Ridge, Wednesday, December 22. Applications for both cities appear in this issue of the **ND News**.

Paducah employees must have their applications in by November 19. This party will be held at 9:30 a.m. in the Arcade Theater, downtown Paducah.

Oak Ridge employees will bring their children to one of five parties set all day at the Oak Ridge High School auditorium. Parties are set for 9 and 11 a.m., 1:30, 3:30 and 5:30 p.m. Featured in Oak Ridge will be the Kirby Chimps,

Santa Claus, and the usual merriment connected with the season. At both locations, there will be a gift-filled stocking for each child.

Application for Oak Ridge employees appears below, and Paducah employees may make application (again) through the application blank on page five. Tickets in both locations will be mailed either to the employee's plant or home address.

Numbers to all parties are limited, so applications should be filed as soon as possible.

This is the last appearance of the Paducah application, the Oak Ridge one will appear in the next issue of **ND News**.

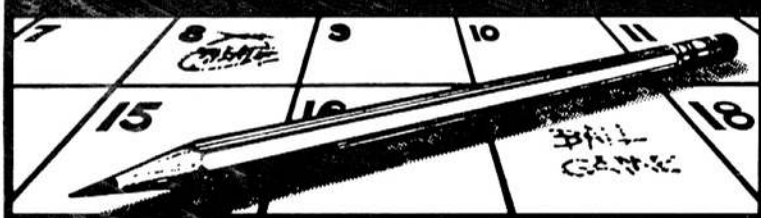
Fall Edition of Review Mailed to ORNL Staff

The Fall 1971 edition of the **Review** was mailed to employees last week. The **Review** is published quarterly and distributed to employees and others associated with ORNL.

Appropriately clad in an autumn orange, the issue contains three articles, three features and an index of **Review** articles to date. Featured are "The Electromagnetic Division: Past and Future" by James B. Ball and John J. Pinajian; "The Making of a Mercury Report" by Robin Wallace; and "Incident in Pakistan" by Frank Plasil.

Interested persons may obtain copies from the editor, Barbara Lyon, 3-6265.

CALENDAR OF EVENTS



TECHNICAL

November 5

Mathematics Division Seminar: "Twenty Questions," R. R. Coveyou. East Auditorium, Building 4500N, 10 a.m.

November 9

Biology Division Seminar: Title to be announced. Joe Clark, University of Washington. Large Conference Room, Building 9207, 12:15 p.m.

Molten Salt Reactor Program Information Meeting: "Application of Voltammetry to Molten Fluoride Salts," D. L. Manning; "Mass Transfer to Circulating Bubbles," T. S. Kress; "Improvements in Some Features of the MSBR Reference Design," E. S. Bettis. East Auditorium, Building 4500N, 9 a.m.

November 10

Biology Division Seminar: "Isozyme Alterations in Chemically Induced Hepatomas," Sidney Weinhouse, Fels Research Institute, Temple University School of Medicine. First Floor Tower Annex Conference Room, Building 9207, 12:15 p.m.

November 11

General Engineering Division Seminar: "Noise—A Problem for the Engineer," David Lipscomb, University of Tennessee. East Auditorium, Building 4500N, 1:30 p.m.

November 15-17

Radiation Shielding Information Center Workshop. Oak Ridge National Laboratory.

November 16

East Tennessee Section of American Chemical Society meeting, 8 p.m. Oak Ridge Holiday Inn. Dr. Allan C. Nixon on "Whither the ACS."

November 17

Metals and Ceramics Division Seminar: "Precipitation in Nb-Hf Alloys," Ray Carpenter. East Auditorium, Building 4500N, 2:30 p.m.

November 18

Nuclear Safety Program Seminar: "The Fourth Geneva Conference," S. E. Beall and M. W. Rosenthal. East Auditorium, Building 4500N, 9:15 a.m.

COMMUNITY

November 5

Oak Ridge Playhouse presents "You're a Good Man, Charlie Brown." Oak Ridge Playhouse, 8:20 p.m. Other performances November 6, 11, 12, 13, 18, 19, 20, 26 and 27 at 8:20 p.m.; November 13 and 20, 2 p.m.

November 7

American Association of University Women film series: "The Cranes are Flying," an award-winning Soviet film. Jefferson Junior High School, 8 p.m.

November 5-7

The Carbide Camera Club Annual Photographic Salon. Oak Ridge Community Art Center. Friday hours 10 a.m. to 4 p.m., 7 p.m. to 9 p.m.; Saturday 1 to 3 p.m.; Sunday 3 to 6 p.m.

Retired Persons Plan Theater Trip Nov. 13

The Oak Ridge Chapter of the American Association of Retired Persons is planning a trip to Crossville, Saturday, November 13, to see the drama "The Corn is Green." W. D. Eubanks is coordinating the trip, and says that the bus will leave Jackson Square at 1:30 p.m. and proceed directly to the theater in Crossville.

An after-theater dinner is planned in Cumberland State Park. Reservations, which must be made by November 5, should be made through Eubanks, at 112 Cedar Road, Oak Ridge, telephone number 483-3929.

Application for Tickets To Christmas Parties

FOR CHILDREN OF CARBIDE EMPLOYEES (IN OAK RIDGE)

(AGES TWO-10 ONLY)

WEDNESDAY, DECEMBER 22

Plant

Employee's Name Badge No.....

Home Address

Plant Address

Number of Tickets (Children).....

Number of Tickets (Adults).....

— CHECK TIME PREFERRED —

Wednesday, December 22 9 A.M. 11 A.M. 1:30 P.M.

Only

3:30 P.M. 5:30 P.M.

Please check first and second choice (write in space "1" or "2") as only a limited number of tickets will be issued for each party. Preference will be given early applicants and if tickets for first choice are exhausted, tickets for second choice will be issued.

Return this form, properly and completely filled in, to the Carbide Recreation Office, Building 4500, Wing 5, ORNL. Please apply for tickets before December 17. The required number of tickets will then be mailed to parents at their home or plant addresses.